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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,522

04/03/2006

Claude Ritter

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7028

59554

7590

05/05/2008

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EXAMINER

BELL, BRUCE F

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

05/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,522	RITTER ET AL.	
	Examiner	Art Unit	
	Bruce F. Bell	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/3/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 19 and 26 are vague and indefinite with respect to the claims as presented, since it is clear from applicants instant specification that the measurements must not be carried out directly on the cell as set forth at page 3, lines 1-5. The essential nature of this feature is apparent from Figures 5 and 6 of the instant specification, where only detectors are illustrated as being associated not with the crust breaker per se, but instead with the piston. See feature 36 in both figures. It appears that since instant claims 1 and 26 do not contain this feature, that essential subject matter is not contained in the instant claims as set forth. Claim 19 and the description of the present application at page 9, lines 29-30 clearly show that the predetermined lower position is optionally the surface of the liquid electrolyte bath and since this surface is subject to variations in height during electrolysis, the detection of the lower position must, be performed in relation to measurements carried out directly on the cell. This is inconsistent with the description set forth at page 3, lines 1-5 of applicants instant specification.

Claims 2-18, 20-25 and 27-35 depend on the above claims and therefore have the same deficiencies.

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Correction and/or clarification are requested.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 29910803 in combination with Sander (6436270).

The DE patent discloses a method for monitoring the addition of powder materials to an electrolysis cell for producing aluminum which cell is provided with a powder dispensing device and a boring device that has a crust breaker. See page 1, lines 1-2. The method makes it possible to detect a malfunction in the crust breaking device and is based on the measurement of the time required for crust breaker movement. See page 2, lines 14-17. The method further includes steps of providing the boring device with a lower position detector. See page 13, lines 1-5. The position of the crust breaker and measuring time for movement thereof to a predetermined position, the upper position of the crust breaker is detected. See page 12, line 26 to page 13, line 6. The time measured is compared with the time interval. See page 13, lines 17-18. The step of determining that the boring device operates properly or improperly, if the times measured are inside or outside the time interval respectfully is performed. See

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page 13, lines 9-14. An appropriate operation is performed based on the event of the boring device malfunction. See page 15, line 21 to page 16, line 6.

The prior art of the DE patent does not teach that the time is accurately measured between two separate positions, the starting position and the lower position, while the crust breaker is being lowered. The effect of which is more accurate diagnostic of the supply operation. The problem is seen to solve the enhancement for the method of monitoring the addition of powder materials to an electrolysis cell for producing aluminum by yielding a simple yet accurate diagnostic of the supply operation at the crust breaker.

Sander discloses the detection of a lower position in combination with the measurement of the time required for crust breaker lowering. See col. 1, line 62 to col. 2, line 5. The Sander patent sets forth the detection of improper crust breaker operation when the crust breaker comes into contact with the crust. See col. 1, lines 20-25 and lines 57-61. The measurement therefore relates to the time required for crust breaker lowering. See Figure 2. The aim is to verify that the crust breaker has effectively broken the crust and is in contact with the melt. Figure 2 clearly shows an accurate measurement of the lowering time and the boring time of the crust breaker. The lower position is determined by the crust breaker contact with the liquid electrolyte. See col. 3, lines 10-11. It follows that the lower position is determined in the same manner as the one described in the present application as can be seen by claim 19 and the description at page 9, lines 29-30.

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The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time of the instant invention because even though the prior art of the DE patent does not describe the time being accurately measured between two separate positions, one having ordinary skill in the art would be motivated to use the teaching of Sander as set forth above to perform such an operation in the method for monitoring supply operations to an electrolysis cell for producing aluminum by means of fused salt electrolysis, since the teaching in Sander set forth the importance of detection of improper crust breaker operation and the importance of measurement of the time required for crust breaker lowering, as well as the importance of accurate measurement of the lowering time and the coring time of the crust breaker. Claim 26 of the instant invention appears to be obvious for the same reasons as claim 1 as shown by the disclosures of the DE patent and Sander set forth above. Claims 2-25 and 27-35 appear to have been met by the combination of DE patent and Sander, since a certified English Translation of the DE patent has not been received by the office to show otherwise and since the international preliminary report provided sets forth that these steps and features are conventional in the art based on these two documents.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kumpulainen (U.S. Patent No. 5405506 and 5378326) disclose an apparatus and method for feeding raw material into an aluminum producing electrolysis cell, wherein the piston shaft is connected to a feeding means and

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has a pneumatic vibrator for punching a hole in the crust and to dispense aluminum powder into the liquid electrolyte once the crust has been punched.

The patents further disclose that the movement of the vibrator and shaft combination is done by time intervals.

Arnason et al (U.S. Patent No. 4417958) discloses a crust breaking chisel with an injection mechanism having a fully automated electronic data processor control that control facilities and means for activating the cylinder, injection nozzle and pneumatic cylinders to reduce the anode effect within the cell.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
May 2, 2008

/Bruce F. Bell/
Primary Examiner, Art Unit 1795